

CLAIMS

1. A peptide of a size comprised between 5 and 40 amino acids, originating from a cytokine, characterized in that at least one of its amino acids
 5 comprises at least one of its atoms separated by a distance d of less than 5 angströms from an atom of the receptor corresponding to said cytokine, the spacing d being evaluated on the basis of structural data, with the exception
 - of the peptides comprised between the 2nd and 3rd cysteine of h RANTES, MIP 1 α and MIP 1 β , and
 - 10 - of the peptides comprised between amino acids 123 and 140 of IFN α .
2. A peptide according to claim 1, characterized in that two of its consecutive amino acids comprise at least one of their atoms separated by a distance d of less than 5 angströms from an atom of the receptor corresponding to said cytokine
- 15 3. A peptide according to one of claims 1 and 2, characterized in that it is chosen from the fragments of the following cytokines: TGF β , IL1 β , VEGF, TNF α , IFN α and γ , IL 4, 5, 6, 10, 12, 13, 15, 18, 23, IP10, MIP 1 α and 1 β , and Rantes.
4. A peptide according to one of claims 1 to 3, characterized in
 20 that it is chosen from the fragments of the following cytokines: TGF β , IL1 β , VEGF, TNF α , IFN γ , IL 4, 5, 6, 10, 12, 13, 15, 18, 23.
5. A peptide according to one of claims 1 to 4, characterized in that d is less than 4 angströms.
6. A peptide according to one of claims 1 to 5 characterized in that
 25 3 or 4 consecutive amino acids of the cytokine peptide correspond to this same spacing criterion.
7. A peptide according to one of claims 1 to 6 characterized in that it comprises less than 30 amino acids.
8. A peptide as defined in claim 1, chosen from or originating
 30 from those the names of which follow:

- hIL1 β (Human Interleukin 1 beta)

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| 1-APVRSLNCTL-10 (SEQ ID No. 1) 29-LHLQGQDMEQQ-39 (SEQ ID No. 2) 123-STSQAEENMPV-132 (SEQ ID No. 3) |
| - hvEGF (Human vascular Endothelial Growth Factor) 73-IMRIKPHQGQHIGEMS-88 (SEQ ID No. 4) |
| - hTNF α (Human Tumor Necrosis Factor alpha) 20-PQAEQQLQWLNRRANALLANGVELRDNQLVVPSEG-54 (SEQ ID No. 5) 80-ISRIAVSYQTKVNLLS-95 (SEQ ID No. 6) 124-FQLEKGDRLSAEINR-138 (SEQ ID No. 7) |
| - hIFN γ (Human Interferon gamma) 1-MQDPYVKEAENLK KYFNAGHSDVADNGTLFLGILKN-36 (SEQ ID No. 8) 118-MAELSPA AKTGKRKRS-133 (SEQ ID No. 9) |
| - hIL10 (Human Interleukin 10) 20-PNMLRDLRDAFSRVKTF FQMKDQLDNLLLKE-50 (SEQ ID No. 10) |
| - hIL4 (Human Interleukin 4) 5-ITLQEIIKTLNSL-17 (SEQ ID No. 11) 70-AQQFHRHKQLIRFLKRLDRNLWGLAG-95 (SEQ ID No. 12) |
| - hIL12p40 (Human Interleukin 12 under unite p40) 80-LLLHKKEDGIWSTDILKDQKEPKNKTFLRCE-110 (SEQ ID No. 13) 135-KSSRGSSDPQG-145 (SEQ ID No. 14) |
| - hIL18 (Human Interleukin 18) 1-YFGKLESKLSVIRNLNDQVLFIDQGNRPLFEDMTD-35 (SEQ ID No. 15) 68-CEKISTLSCEN-78 (SEQ ID No. 16) 141-EDELGDRSIMFTVQNED-157 (SEQ ID No. 17) |
| - hIP10 (Human Interferon gamma inducible protein) 39-VEIIATMKKKGEKRCLNPESKA-60 (SEQ ID No. 18) |

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| - hIL5 (Human Interleukin 5) 1-IPTSALVKETLALLSTHRTLLIANET-26 (SEQ ID No. 19) 96-LQEFLGVMNTEWI-108 (SEQ ID No. 20) |
| - hTGF β 2 (Human Transforming Growth Factor beta type 2) 25-KRDLGWKWIHE-35 (SEQ ID No. 21) 87-TILYYIGKTPKIEQ –100 (SEQ ID No. 22) |
| - hIL15 (Human Interleukin 15) 1-ANWVNVISDLKKI-13 (SEQ ID No. 23) 74-SSNGNVTESGCKECEEEKNIKEFLQSFVHIVQMF-111 (SEQ ID No. 24) |
| - hIL6 (Human Interleukin 6) 28-KQIRYILDGISA-39 (SEQ ID No. 25) 114-RAVQMSTKVLIQFLQKKAKNLDAITTPDPTTNASLL-149 (SEQ ID No. 26) |
| - hMIP1 α (Human Macrophage Inflammatory Protein alpha) 51-ADPSEEWVQKYVSDLELSA –69 (SEQ ID No. 27) |
| - hMIP1 β (Human Macrophage Inflammatory Protein beta) 52-ADPSESWVQEYVYDLELN-69 (SEQ ID No. 28) |
| - hIL13 (Human Interleukin 13) 8-TALRELIEEL-17 (SEQ ID No. 29) 57-CSAIEKTQRMLSGFCPHKVSAGQFSS-82 (SEQ ID No. 30) |
| - hIL23 (Human Interleukin 23) 52 GHMDLREEGDEETT 65 (SEQ ID No. 31) 115 LLPDSPVGQLHASLLGLSQ 133 (SEQ ID No. 32) 160 LLRFKILRSLQAFVAVAAARV 179 (SEQ ID No. 33) |
| - hRANTES (Human Regulated upon Activation Normal T-cell expressed) 51-ANPEKKWVREYINSLEMS-68 (SEQ ID No. 34) |

-hIFN α (Human Interferon alpha)

12-RRTLMLLAQMRK-23 (SEQ ID No. 35)

95-LEACVIQGVGVVTETPLMKEDSILAVRK-121 (SEQ ID No. 36)

or a fragment of said peptides.

9. A peptide derivative as defined in one of claims 1 to 8 by deletion, substitution, addition, cyclization, stereochemical modification (use of
5 D series amino acids), or functionalization (such as acylation) of one or more amino acids of said peptide.

10. An immunogenic compound characterized in that it comprises a peptide or peptide derivative as defined in one of claims 1 to 9, it being understood that it does not comprise other epitopes of said cytokine and in
10 that it is capable of generating in a subject antibodies recognizing the native cytokine.

11. A peptide or peptide derivative or immunogenic compound as defined in one of claims 1 to 10 or comprised between amino acids 123 and 140 of IFN α , for its use in a method of therapeutic treatment of the human or
15 animal body.

12. Use of a peptide or peptide derivative or immunogenic compound as defined in one of claims 1 to 10 or comprised between amino acids 123 and 140 of IFN α , for the preparation of a curative or preventative medicament intended for the treatment or prevention of the diseases linked to
20 an excess or to the presence of cytokines.

13. Use of a peptide or peptide derivative or immunogenic compound as defined in one of claims 1 to 10 or comprised between amino acids 123 and 140 of IFN α , for the preparation of a curative or preventative medicament intended for the treatment of an auto-immune disease.

14. A pharmaceutical composition which contains at least one peptide or peptide derivative or immunogenic compound as defined in one of claims 1 to 10 or comprised between amino acids 123 and 140 of IFN α , as active ingredient.